

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,964,828 B2  
APPLICATION NO. : 09/845178  
DATED : November 15, 2005  
INVENTOR(S) : Zhonghua Lu

Page 1 of 7

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title Page

Item (56), under U.S. pat. Documents line 17, Insert the following:

--

2001/0010807	8/2/01	Matsubara
2002/0012843	1/2002	Munakata et al.
2002/0088210	11/8/01	Naruoka et al.
2002/0150530	10/17/02	Gao et al.
2002/053863	5/9/02	Ito et al.
2003/0022083	1/2003	Paulsen et al.
2003/3082452	5/1/03	Ueda et al.
4,687,031	1/28/88	Riley
5,264,201	11/23/93	Dahn et al.
5,292,601	3/8/94	Sugeno et al.
5,370,948	12/8/94	Hasegawa et al.
5,393,622	2/1995	Nitta et al.
5,478,671	12/28/95	Idola
5,478,675	12/28/95	Nagaura et al.
5,521,027	5/28/96	Okuno et al.
5,525,443	5/11/96	Okuno et al.
5,531,920	7/2/96	Mao et al.
5,565,688	10/15/96	Hayashi
5,589,300	12/31/96	Fauteux et al.
5,609,975	3/11/97	Hasegawa et al.
5,626,635	5/8/97	Yamaura et al.
5,742,070	4/21/98	Hayashi et al.
5,770,173	6/23/98	Nitta et al.
5,783,332	7/21/98	Amine et al.
5,858,324	1/12/99	Dahn et al.

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,964,828 B2  
APPLICATION NO. : 09/845178  
DATED : November 15, 2005  
INVENTOR(S) : Zhonghua Lu

Page 2 of 7

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

5,900,385	5/4/99	Dahn et al.
5,911,920	6/15/99	Hasezaki et al.
5,981,445	11/9/99	Kirchnerova et al.
5,993,998	11/30/99	Yasuda
6,017,854	1/25/00	Kumta et al.
6,030,726	2/29/00	Takeuchi et al.
6,040,090	3/21/00	Sunagawa et al.
6,077,498	6/20/00	Ito et al.
6,103,422	8/15/00	Kanai
6,188,887	1/2001	Dahn et al.
6,214,493	4/10/01	Bruce et al.
6,270,925	8/2001	Takada et al.
6,333,128	12/2001	Sunagawa et al.
6,381,758	3/28/02	Gao et al.
6,388,749	4/2002	Yanal et al.
6,372,385	4/2002	Kweon et al.
6,521,379	2/2003	Nishida et al.
6,551,744	4/22/03	Ohzuku et al.
6,589,489	7/8/03	Gao et al.
6,589,894	7/8/03	Gosho et al.
6,620,400	9/16/03	Gao et al.
6,660,432	12/9/2003	Paulsen et al..
6,677,082	1/13/2004	Thackeray et al.
6,680,143	1/20/2004	Thackeray et al.

--

On the title page item (56) line 13, under Foreign pat. Documents insert the following:

--

JP2822859		Japan
JP05-067466	3/19/1993	Japan
JP05-182667	7/23/1993	Japan
JP05-198301	8/6/1993	Japan
JP05-283077	10/29/1993	Japan
JP06-275284	9/30/1994	Japan

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,964,828 B2  
APPLICATION NO. : 09/845178  
DATED : November 15, 2005  
INVENTOR(S) : Zhonghua Lu

Page 3 of 7

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

JP06-275269	9/30/1994	Japan
JP07-134985	5/23/1995	Japan
JP07-235291	8/5/1995	Japan
JP07-235292	8/5/1995	Japan
JP08-171935	7/2/1996	Japan
JP08-315819	11/28/1996	Japan
JP10-188982	7/21/1998	Japan
JP2000-173589	6/23/2000	Japan
JP2000-173687	6/23/2000	Japan
JP2000-195514	7/14/2000	Japan
JP2000-231919	8/22/2000	Japan
JP2000-323123	11/24/2000	Japan
JP2000-323142	11/24/2000	Japan
JP2000-327339	11/28/2000	Japan
JP2001-052702	2/23/2001	Japan
JP88055747	3/31/1980	Japan
JP3079382		Japan
JP2688678		Japan
JP2661566		Japan
JP2699176		Japan
JP8-213015	8/20/1996	Japan
JP 10-1065652		Japan
2001-148428		Japan
2000-268821		Japan
3187783		Japan
8-37007	1996	Japan
2000-277151		Japan
2000-223157	8/11/2000	Japan
2000-294242	10/20/00	Japan
2000-294240		Japan
2002-063900	2/28/2002	Japan
EP1 117 145	7/18/2001	EPO
EP 0 501 187	4/17/1996	EPO
EP 0 903 796	3/24/99	EPO
0 468 842 B2	12/1/99	EPO
WO00/23380	4/27/00	PCT
WO 97/26683	7/24/97	PCT
0 813 268	12/17/97	EP
0 944 126	9/22/99	EP
2002/042813	2/8/02	Japan
1 189 296 A2	3/20/02	EP
WO 02/40404A1	5/23/02	PCT
2000/223122	8/11/00	Japan
11-364156	12/24/99	Japan

--

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,964,828 B2  
APPLICATION NO. : 09/845178  
DATED : November 15, 2005  
INVENTOR(S) : Zhonghua Lu

Page 4 of 7

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the title page item (56), under Other Publications page 2 second col. line 34, insert

--Numata, K. et al., *Preparation and electrochemical properties of layered lithium-cobalt-manganese oxides*, Solid State Ionics, 118(1999) pp. 117-120.

Numata K. et al., *Synthesis of Solid Solutions in a System of  $\text{LiCoO}_2\text{-Li}_2\text{MnO}_3$  for Cathode Materials of Secondary Lithium Batteries*, The Chemical Society of Japan, (1997), pp. 725-726.

Numata K. et al., *Synthesis and characterization of layer structured solid solutions in the system of  $\text{LiCoO}_2\text{-Li}_2\text{MnO}_3$* , Solid State Ionics 117 (1999) pp. 257-263.

Armstrong and Bruce, "Synthesis of layered  $\text{LiMnO}_2$  as an electrode for rechargeable lithium batteries," Nature, 1996, 381:499-500.

Dahn et al., "Structure and Electrochemistry of  $\text{Li}_2\text{Cr}_x\text{Mn}_{2-x}\text{O}_4$  for  $1.0 \leq x \leq 1.5$ ," J. Electrochem. Soc., 1998, 145(3):851-859.

Delmas et al., "Soft chemistry in  $\text{A}_x\text{MO}_2$  sheet oxides," Revue de Chimie Minérale, 1982, 19:343-351.

DeSilvestro, Pacific Lithium Limited – Novel layered cathode materials for advanced lithium ion batteries," presented at May 2000 International Li Battery Conference, Como, Italy

Hill and Howard, "Peak Shape Variation in Fixed-Wavelength Neutron Powder Diffraction and its Effect on Structural Parameters Obtained by Rietveld Analysis," J. Appl. Cryst., 1985, 18:173-180

Naruoka et al., "Development of  $\text{LiNi}_{1-x-y}\text{Co}_x\text{Mn}_y\text{O}_2$  System Positive Active Material for Lithium Ion Cells," GS News Technical Report, 2000, 59(2):13-17 (Translation attached)

Neudecker et al., "Lithium Manganese Nickel Oxides  $\text{Li}_x(\text{Mn}_y\text{Ni}_{1-y})_{2-x}\text{O}_2$ ," J. Electrochem. Soc., 1998, 145(12):4160-4168

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,964,828 B2  
APPLICATION NO. : 09/845178  
DATED : November 15, 2005  
INVENTOR(S) : Zhonghua Lu

Page 5 of 7

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Paulsen and Dahn, "02 Structure  $\text{Li}_{2/3}[\text{Ni}_{1/3}\text{Mn}_{2/3}]\text{O}_2$ : A New Layered Cathode Material for Rechargeable Lithium Batteries," J. Electrochem. Soc., 2000, 147(3):861-868.

Rossen et al., "Structure and electrochemistry of  $\text{Li}_x\text{Mn}_y\text{Ni}_{1-y}\text{O}_2$ " Solid State Ionics, 1992, 57:311-318

Wiles and Young, "A new computer program for Rietveld analysis of X-ray powder diffraction patterns," J. Appl. Cryst., 1981, 14:149-151. -- therefor.

Title Page item (56), under Other Publications second col.

Line 33, delete "Composition" and insert -- Compositions --, therefor.

Line 33, after "Ion" insert -- Batteries --.

Title page item (56), page 2. col. 1,

Line 9, delete "for" and insert -- of --, therefor.

Column 4

Line 34, delete " $\text{Ni}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ " and insert --  $\text{Ni}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$  --, therefor.

Line 35, delete " $\text{Mn}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ " and insert --  $\text{Mn}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$  --, therefor.

Line 37, delete " $\text{LiOH} \cdot \text{H}_2\text{O}$ " and insert --  $\text{LiOH} \cdot \text{H}_2\text{O}$  --, therefor.

Line 46, delete " $\text{LiOH} \cdot \text{H}_2\text{O}$ " and insert --  $\text{LiOH} \cdot \text{H}_2\text{O}$  --, therefor.

Column 5

Line 53, after "parameters." insert -- An asterisk means "not tested." --.

Column 6

Line 27, after "parameters." delete "An asterisk means "not tested".".

Column 8

Line 52, delete  $\text{Ni}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ " and insert --  $\text{Ni}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$  --, therefor.

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,964,828 B2  
APPLICATION NO. : 09/845178  
DATED : November 15, 2005  
INVENTOR(S) : Zhonghua Lu

Page 6 of 7

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 8

Line 53, delete "Mn(NO<sub>3</sub>)<sub>2</sub>·4H<sub>2</sub>O" and insert -- Mn(NO<sub>3</sub>)<sub>2</sub>·4H<sub>2</sub>O --, therefor.

Line 53-54, delete "Co(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O" and insert -- Co(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O --, therefor.

Line 55, delete "LiOH·H<sub>2</sub>O" and insert -- LiOH·H<sub>2</sub>O --, therefor.

Line 67, delete "Li[Ni<sub>0.25</sub>Co<sub>0.05</sub>Mn<sub>0.25</sub>]O<sub>2</sub>" and insert --Li[Ni<sub>0.25</sub>Co<sub>0.5</sub>Mn<sub>0.25</sub>]O<sub>2</sub>--

Column 9

Line 55, in Claim 1, after "(a)" delete "0" and insert -- 0.083 --, therefor.

Line 57, in Claim 1, after "proviso that" insert -- (i) M<sup>1</sup> includes nickel, (ii) --.

Line 58, in Claim 1, after "and" insert -- (iii) --.

Column 10

Line 4, in Claim 2, after "M<sup>1</sup>" delete "is" and insert -- further includes an element --, therefor.

Line 4, in Claim 2, after "consisting of" delete "Ni".

Line 8, in Claim 3, delete "0" and insert -- 0.083 --, therefor.

Line 9, in Claim 3, after "proviso that" insert -- (i) M<sup>2</sup> includes nickel, (ii) --.

Line 10, in Claim 3, after "and" insert -- (iii) --.

Line 16-17, delete "4. A cathode composition according to claim 3 wherein 0.083<y<0.5".

Line 21-22, delete "7. A cathode composition according to claim 6 wherein M<sup>2</sup> is Ni".

Line 25, in Claim 8, delete "0" and insert -- 0.083 --, therefor.

Line 26, in Claim 8, after "proviso that" insert -- (i) M<sup>3</sup> includes nickel, (ii) --.

Line 27, in Claim 8, after "and" insert -- (iii) --.

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,964,828 B2  
APPLICATION NO. : 09/845178  
DATED : November 15, 2005  
INVENTOR(S) : Zhonghua Lu

Page 7 of 7

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 10

Line 34-35, delete "9. A cathode composition according to claim 8 wherein  $0.083 < y < 0.5$ ."

Line 40-41, delete "12. A cathode composition according to claim 11 wherein  $M^3$  is Co."

Line 43, in Claim 13, delete " $0 < y < 0.5$ ," and insert --  $0.083 < y < 0.5$ , with the proviso that (i) --, therefor.

Line 43, In Claim 13, after "chromium," delete "and" and insert -- (ii) --, therefor.

Line 45, in Claim 13, after " $M^4$ ," delete "and" and insert -- (iii)  $M^4$  or  $M^5$  includes nickel, and (iv) --, therefor.

Line 52-53, delete "14. A cathode composition according to claim 13 wherein  $0.083 < y < 0.5$ ."

Line 65, in Claim 19, delete "cathodes." and insert -- cathode. --, therefor.

Signed and Sealed this

Sixth Day of March, 2007



JON W. DUDAS  
*Director of the United States Patent and Trademark Office*